## Southern Wisconsin Spring Flood Outlook

Feb 26, 2021



## **Key Points**



- Spring flood risk is above average across most of southern Wisconsin, except average for Wisconsin River basin
  - Risk largely due to snowpack
  - Ongoing slow snow melt is beneficial, but some snow will remain into early March
  - Time period of greatest risk starts second week in March
- River and shoreline flooding possible near Lake Michigan
  - Mainly with high wind and wave events



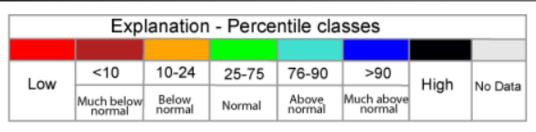


## **Spring Flood Factors**

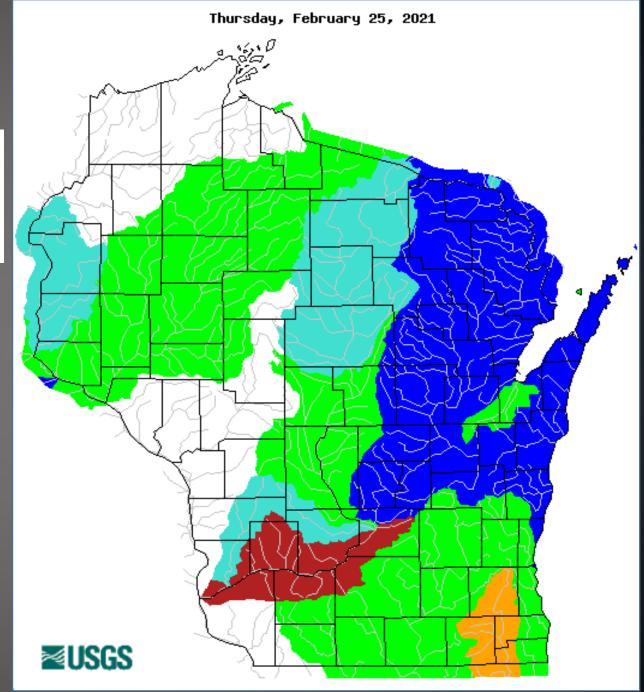
- ✓ Deep snowpack with high liquid water equivalent
- ✓ Average to High river levels
- ✓ Average to High soil moisture
- × Deep frost depth
- **□Quick rate of snowmelt**
- ☐Heavy rain



#### 7 day Mean Streamflow Percentile



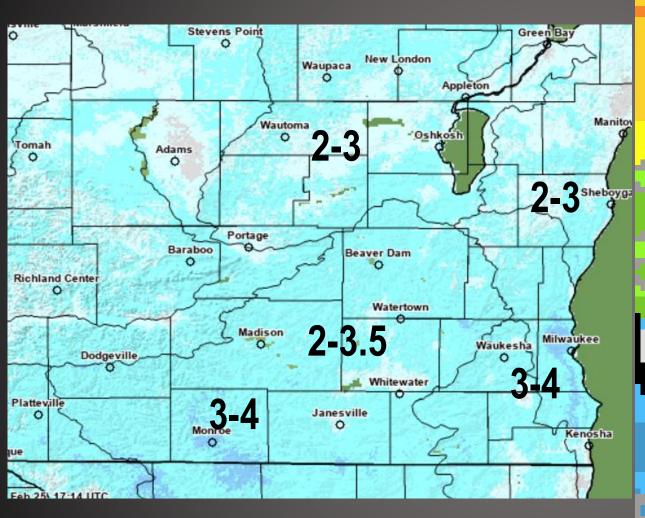
Average to high streams can hold less runoff

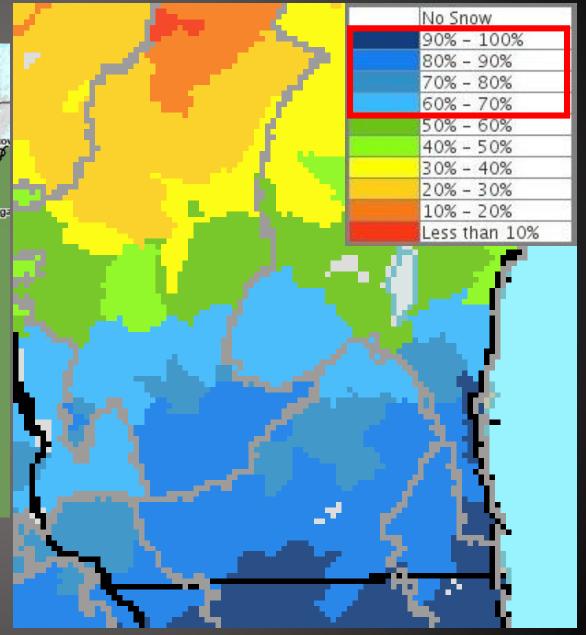




#### Snow Water Equivalent (inches) 2/25/2021

#### **Snow Water Percentile 2/22/2021**

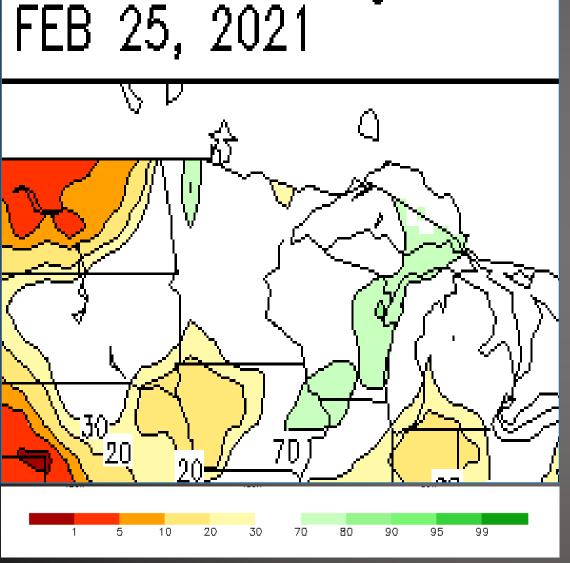


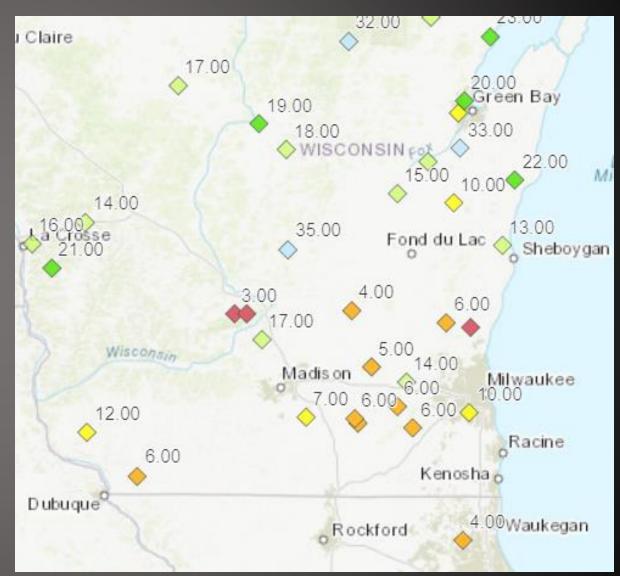




#### Soil Moisture Percentile

#### Frost Depth 2/26/2021







## How Does This Compare to Last Year?

#### 2020: High flood risk

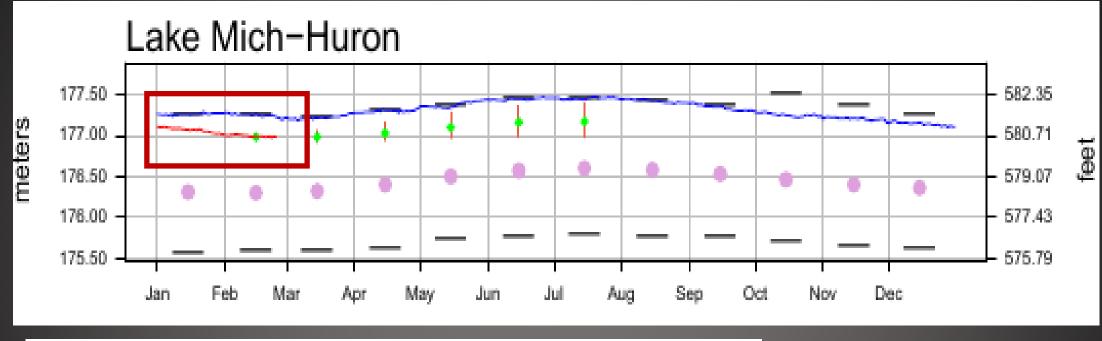
- High stream flow, high soil moisture, forecast wet spring
- Didn't get excessive snow, had an orderly snow melt. Some flooding occurred but could have been worse.

#### This year

- Lower streamflow and soil moisture (still elevated)
- Higher snowpack



### Lake Michigan Water Levels



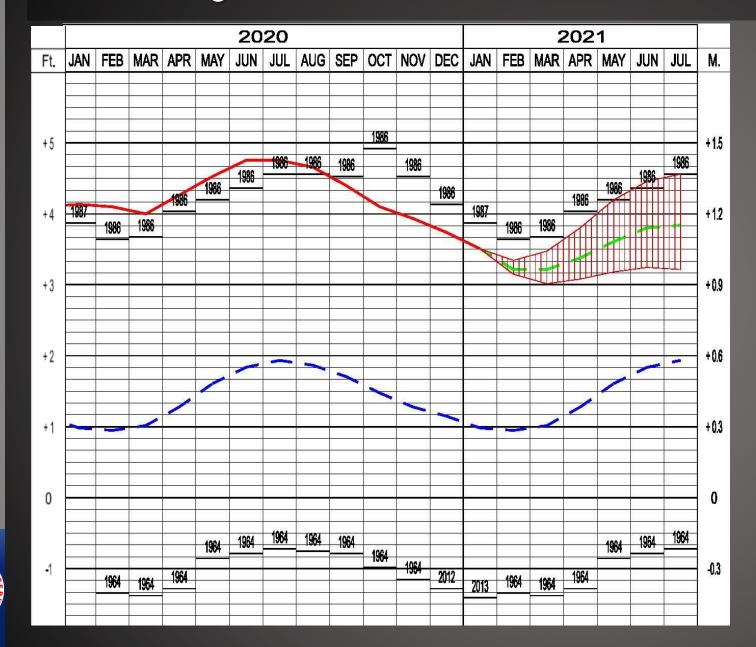


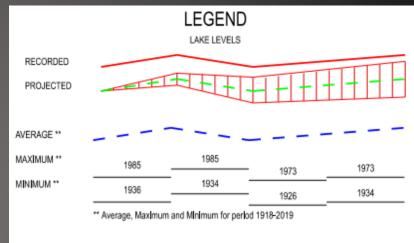
Lake level is 14 inches lower than Feb 2020, but still around 2.5 feet above the long-term average.

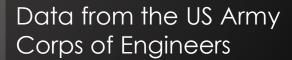




## Lake Michigan Forecast Water Levels









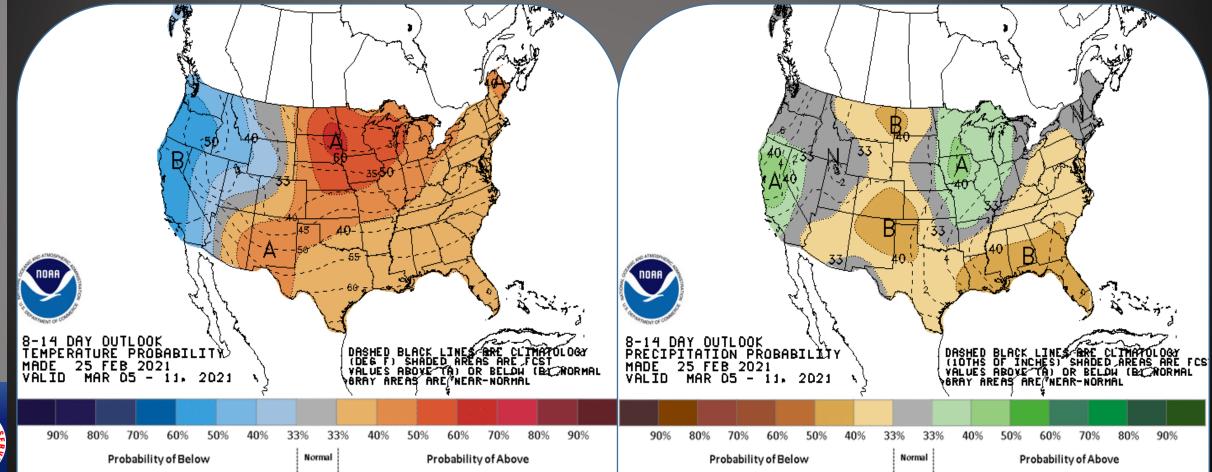


## For The Next Week

- Good scenario for a steady snow melt
  - Little precipitation
  - Highs 30s-40s, Lows below freezing

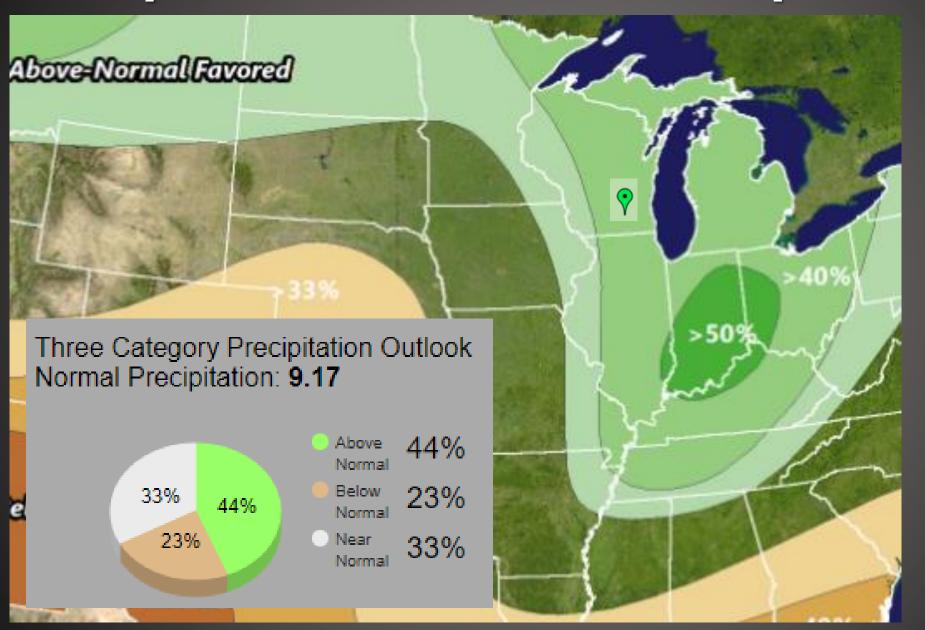


## The time period to watch for greatest risk





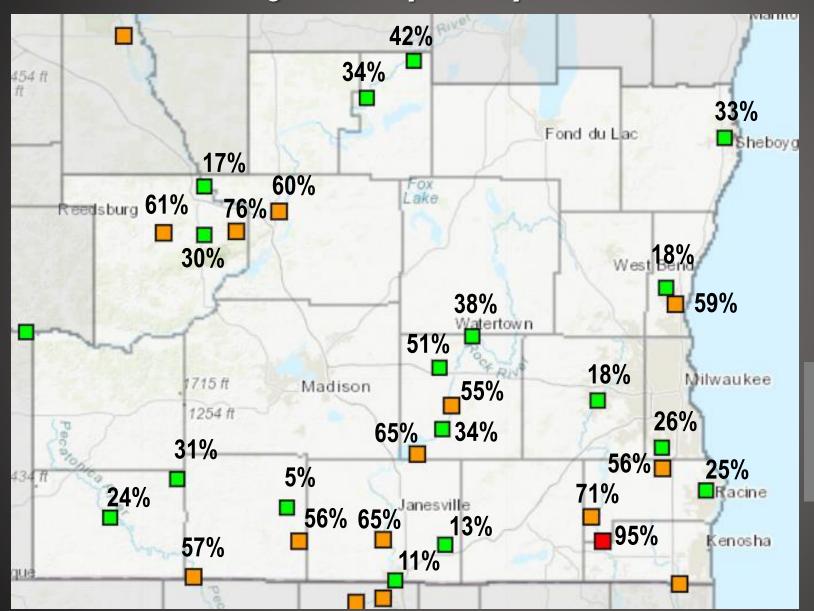
## Precipitation Outlook for March-April-May Season



Any rain on frozen ground is a concern



# Chance of exceeding Minor Flood stage during March-April-May Season

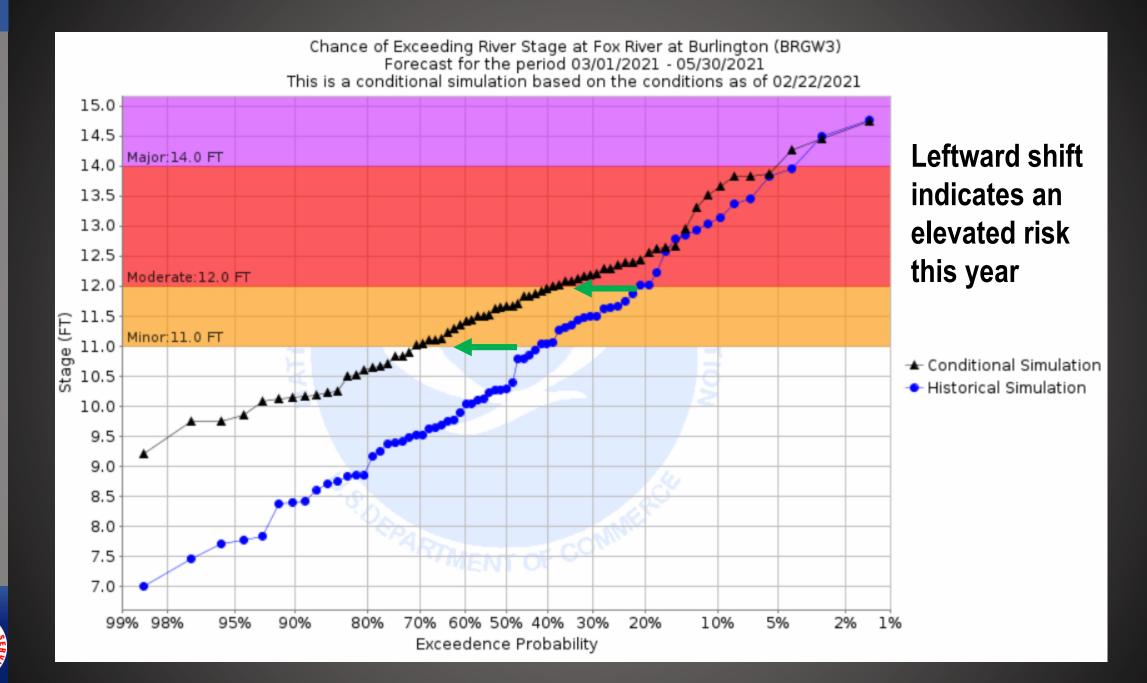


Greater than 50% chance of exceeding flood levels during March-April-May Season

- > 50% Major Flooding
- > 50% Moderate Flooding
  - > 50% Minor Flooding
- < 50% Chance of Flooding

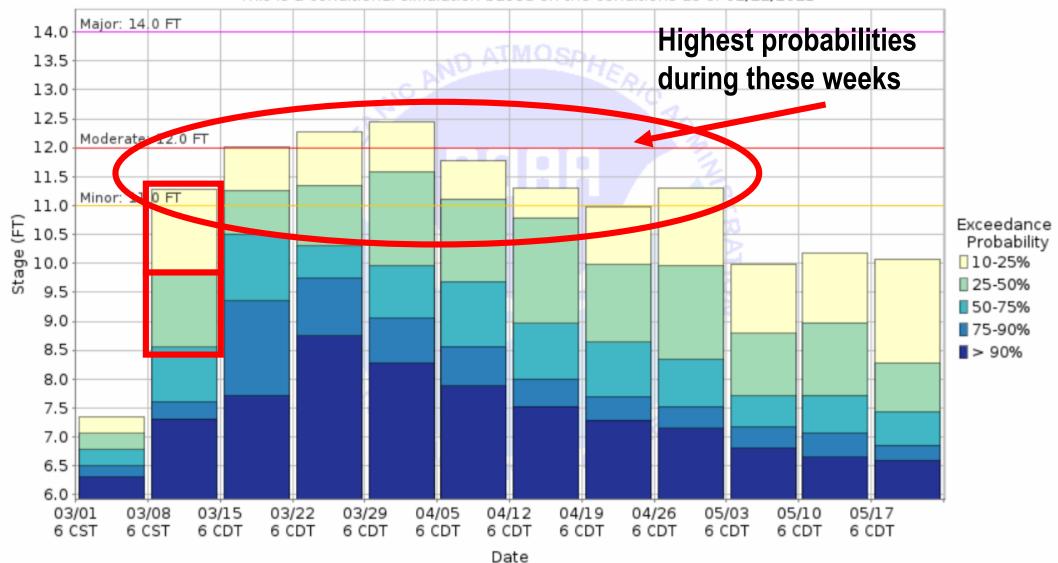
All probabilities (except Wisconsin River Basin) are higher than a typical year





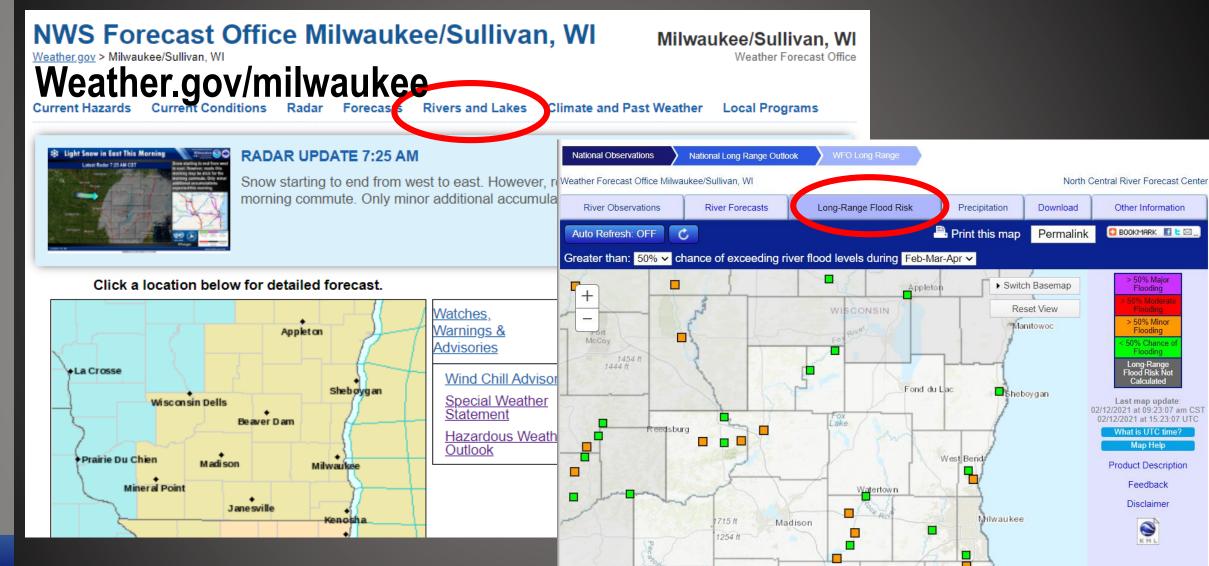


Weekly Chance of Exceeding River Stage at Fox River at Burlington (BRGW3)
Forecast for the period 03/01/2021 - 05/30/2021
This is a conditional simulation based on the conditions as of 02/22/2021





#### **How To Find the Probability Info**



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#### **National Weather Service**

#### Advanced Hydrologic Prediction Service

Home News Organization O NW: Search for: Local weather Probability Information **National Observations** forecast by "City, ST" City, ST This probabilistic forecast is issued by the North Central River Forecast Center Go Probability Information Hydrograph River at a Glance Download **National Conditions** Rivers Weekly Chance of Exceeding River Stage at Baraboo River a Satellite Weekly Chance of Exceeding Levels Forecast for the period 02/15/2021 - 05/1 Climate This is a conditional simulation based on the condition **Observed Precip** Chance of Exceeding Levels During Entire Major: 23.1 FT Period **Local Conditions** Moderate: 22.0 FT Warnings Short-term Probabilistic Guidance (Experimental) Weather 21 Not Available **Forecast** 20 Radar 19 18 **AHPS Documentation User Guide** 17 **User Brochure** Stage (FT) 15 14 Minor: 16.0 FT Exceedance Probability What is AHPS? 010-25% **Facts** 25-50% **Our Partners** 50-75% 13 75-90% 12 Feedback/Questions ■ > 90% **Provide** 11 Feedback 10 **Ask Questions** 



## Summary



- Spring flood risk is above average across most of southern Wisconsin, except average for Wisconsin River basin
  - Ongoing slow snow melt is beneficial, but some snow will remain into early March
  - Time period of greatest risk is March
- River and shoreline flooding possible near Lake Michigan

Break up ice jams possible: Risk is Low to Medium



# Next Update: March 11-12

**Questions?** 

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